

EXAMPLES OF UNDULATING CONDUITS

Figure 1.

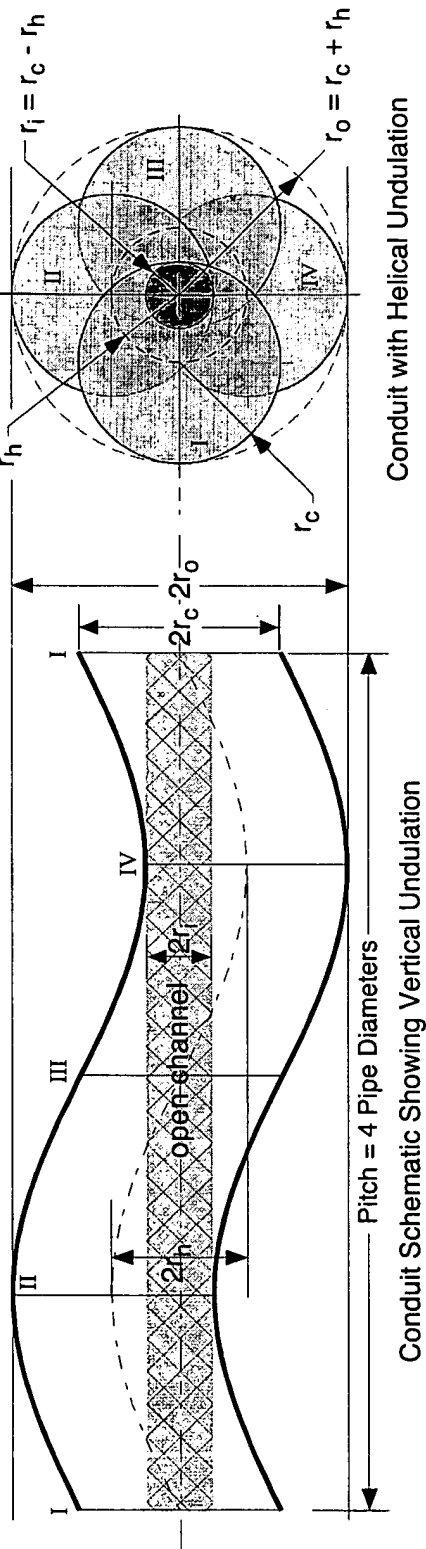
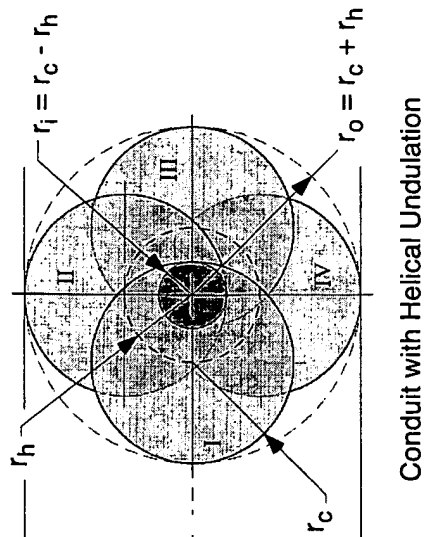
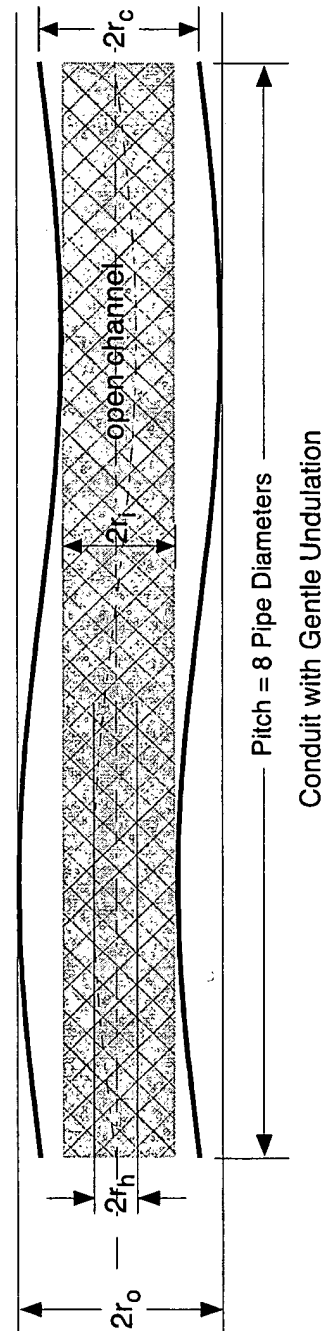


Figure 2.



r_c = radius of conduit
 r_h = radius of helical path of conduit centerline
 $r_o = r_c + r_h$ = outer radius of conduit helix
 $r_i = r_c - r_h$ = radius of open interior channel ($r_c \geq r_h$)
 $= r_h - r_c$ = inner radius of conduit helix ($r_c < r_h$)

Figure 3.



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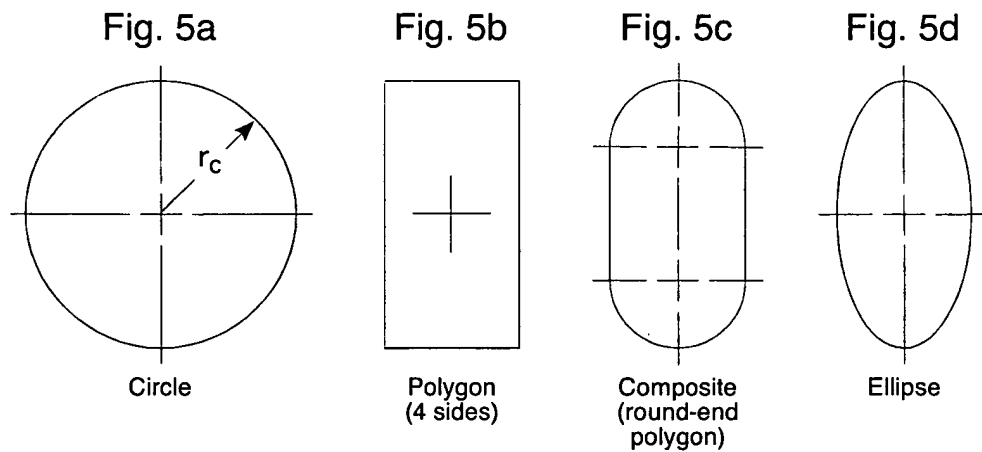
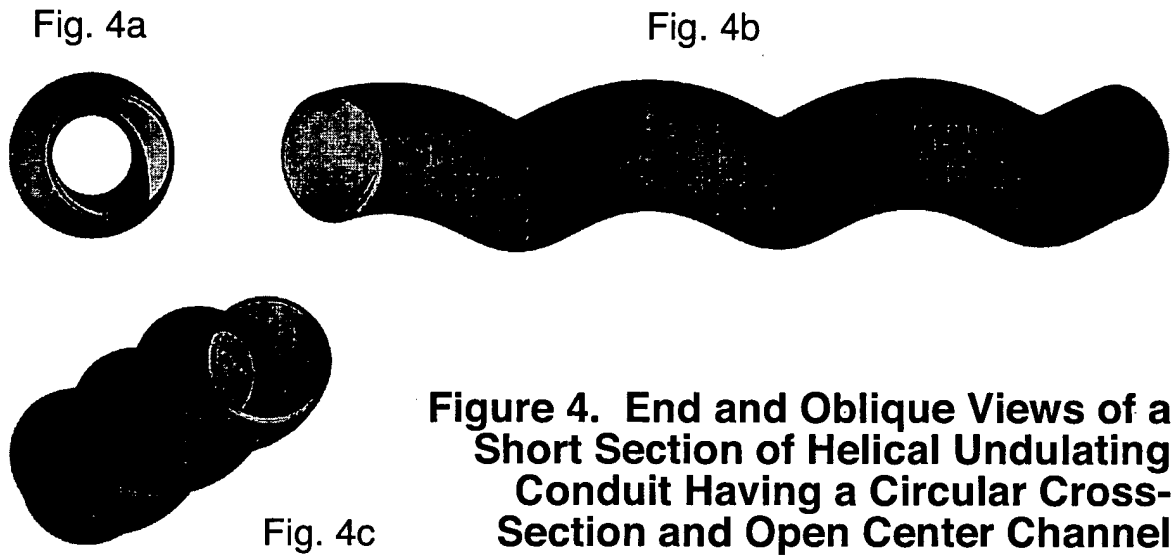
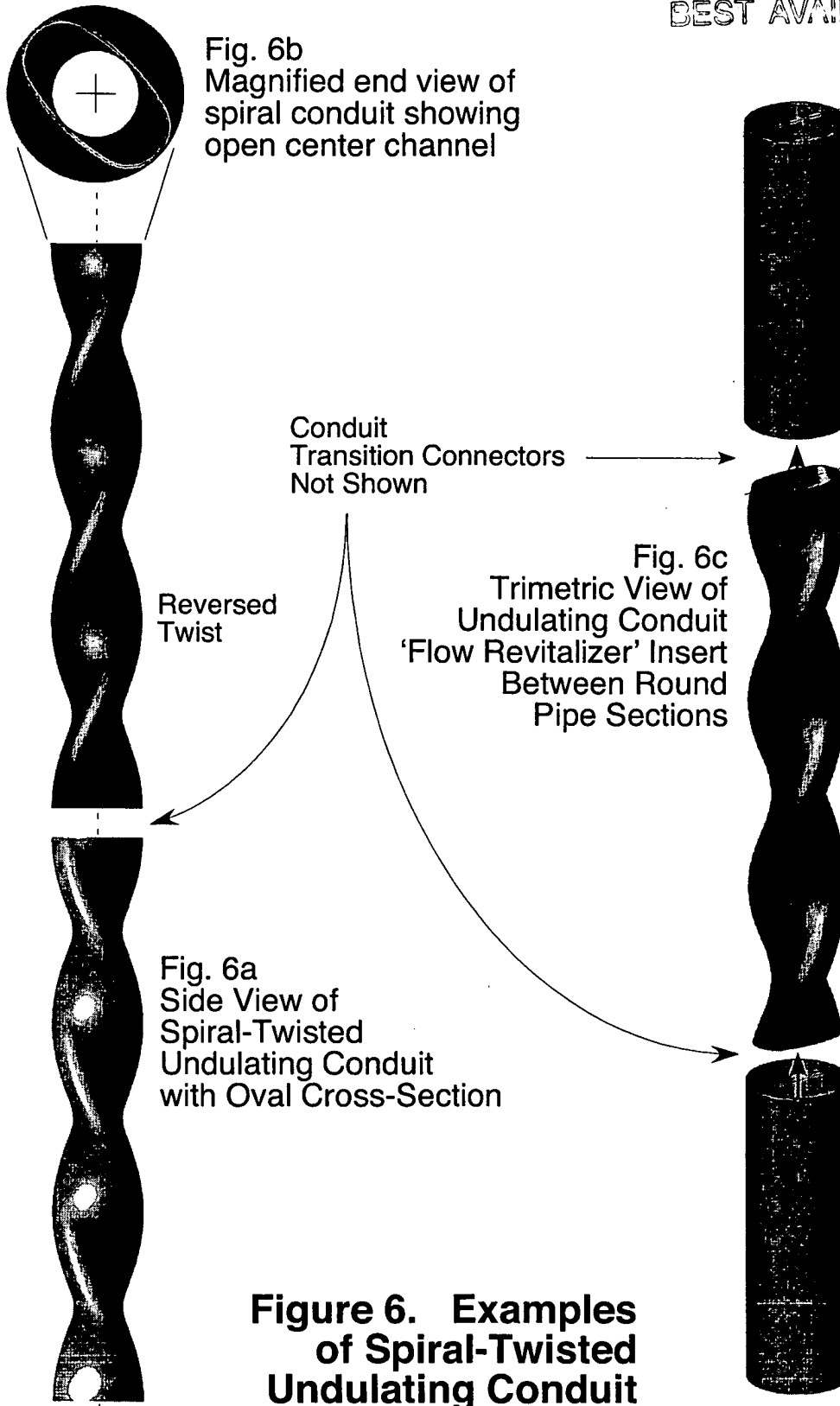


Figure 5. Some Cross-Sectional Shapes for Undulating Conduits

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**Figure 6. Examples
of Spiral-Twisted
Undulating Conduit**

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Figure 7
Use Of Undulating Conduit Hydrodynamic Mixers In A Bitumen Extraction Circuit

